What is claimed is:

1. A composite device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer different from each other in composition, each of the ceramic layers having one or a plurality of circuit element patterns formed on a surface thereof to provide an electronic circuit for performing a predetermined function, an intermediate layer being interposed between the first ceramic layer and the second ceramic layer, the intermediate layer varying in composition in the direction of thickness thereof and exhibiting substantially the same shrinkage as the first ceramic layer at a joint thereof with the first ceramic layer when fired and substantially the same shrinkage as the second ceramic layer at a joint thereof with the second ceramic layer when fired.

2. A composite device of the laminate type according to claim 1 wherein the intermediate layer contains at least one of elements constituting the first ceramic layer and at least one of elements constituting the second ceramic layer, the intermediate layer containing a greater amount of said one element of the first ceramic layer than said one element of the second ceramic layer in the vicinity of the joint thereof

with the first ceramic layer and a greater amount of said one element of the second ceramic layer than said one element of the first ceramic layer in the vicinity of the joint thereof with the second ceramic layer.

3. A composite device of the laminate type according to claim 1 wherein the intermediate layer has the same composition as the first ceramic layer in the vicinity of the joint thereof with the first ceramic layer and the same composition as the second ceramic layer in the vicinity of the joint thereof with the second ceramic layer.

4. A composite device of the laminate type according to claim 1 wherein the intermediate layer is made from a material having a specific resistance of at least 10^4 Ω-cm.

5. A composite device of the laminate type according to claim 1 wherein the first ceramic layer is a magnetic body, and the second ceramic layer is a dielectric.

6. A process for producing a composite device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer different from each other in composition, each of the ceramic layers having one or a plurality of circuit element patterns formed on a surface thereof, the circuit element patterns of the ceramic layers

being connected to each other to provide an electronic circuit for performing a predetermined function, the process having the steps of:

preparing a first green sheet having one or a plurality of circuit element patterns formed on a surface thereof, a second green sheet having one or a plurality of circuit element patterns formed on a surface thereof, and an intermediate green sheet varying in composition in the direction of thickness thereof and exhibiting at one surface thereof substantially the same shrinkage as the first green sheet when fired and at the other surface thereof substantially the same shrinkage as the second green sheet when fired,

preparing a laminate comprising a plurality of layers by sandwiching the intermediate green sheet between the first green sheet and the second green sheet, with said one surface facing the first green sheet and with said other surface facing the second green sheet, and

firing the laminate.

7. A process for producing a composite device of the laminate type according to claim 6 wherein the intermediate green sheet is prepared in the sheet preparing step by

lapping a first green sheet and a second green sheet over each other and firing the two sheets in this state at a low temperature.

8. A process for producing a composite device of the laminate type according to claim 6 wherein the intermediate green sheet is prepared in the sheet preparing step by forming into a strip a first slurry for making the first green sheet and forming into a strip a second slurry for making the second green sheet while lapping the strips over each other in layers.

9. A process for producing a composite device of the laminate type according to claim 8 wherein the layers of slurries are heated.

10. A composite device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer different from each other in composition, each of the ceramic layers having one or a plurality of circuit element patterns formed on a surface thereof to provide an electronic circuit for performing a predetermined function, at least one of the first ceramic layer and the second ceramic layer as arranged in contact with each other varying in composition in the direction of thickness thereof and

exhibiting substantially the same shrinkage as the other ceramic layer at a joint thereof with the other ceramic layer when fired.

11. A composite device of the laminate type according to claim 10 wherein said one ceramic layer contains at least one of elements constituting the other ceramic layer and increases in the content of said one element toward the joint thereof with the other ceramic layer.

12. A composite device of the laminate type according to claim 10 wherein said one ceramic layer has the same composition as the other ceramic layer in the vicinity of the joint thereof with the other ceramic layer.

13. A composite device of the laminate type according to claim 10 wherein the first ceramic layer is a magnetic body, and the second ceramic layer is a dielectric.

14. A composite device of the laminate type according to claim 10 wherein each of the first ceramic layer and the second ceramic layer as arranged in contact with each other varies in composition in the direction of thickness thereof, and the two ceramic layers exhibit substantially the same shrinkage in the vicinity of the joint thereof when fired.

15. A green sheet for use in fabricating a composite

device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer different from each other in composition and arranged in contact with each other, the green sheet being serviceable as a material for at least one of the first ceramic layer and the second ceramic layer, the green sheet varying in composition in the direction of thickness thereof and exhibiting the same shrinkage as other green sheet for making the other ceramic layer at a joint thereof with the other green sheet when fired.

16. A process for producing a composite device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer which are different in composition, each of the ceramic layers having one or a plurality of circuit element patterns formed on a surface thereof to provide an electronic circuit for performing a predetermined function, the process having the steps of:

preparing first green sheets for making first ceramic layers and second green sheets for making second ceramic layers,

forming one or a plurality of circuit element patterns on a surface of each of a required number of first green sheets

and a required number of second green sheets,

preparing a laminate comprising a plurality of layers by superposing the first green sheets and the second green sheets each having the circuit element pattern or patterns formed thereon, and

firing the laminate,

at least one of the first green sheet and the second green sheet to be arranged in contact with each other in the laminate preparing step being made to vary in composition in the direction of thickness thereof in the sheet preparing step so that one surface of said one green sheet exhibits substantially the same shrinkage as the other green sheet when fired, said one green sheet being superposed on the other green sheet in the laminate preparing step, with said one surface thereof facing the other green sheet.

17. A process for producing a composite device of the laminate type according to claim 16 wherein the first green sheet and the second green sheet are each uniform in composition in the direction of thickness thereof, lapped over each other in layers and then fired at a low temperature in this state in the sheet preparing step to thereby prepare said one green sheet.

18. A process for producing a composite device of the laminate type according to claim 16 wherein said one green sheet is prepared in the sheet preparing step by forming into a strip a first slurry for making the first green sheet and forming into a strip a second slurry for making the second green sheet while lapping the strips over each other in layers.

19. A process for producing a composite device of the laminate type according to claim 18 wherein the layers of slurries are heated.

20. A composite device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer different from each other in composition, each of the ceramic layers having one or a plurality of circuit element patterns formed on a surface thereof to provide an electronic circuit for performing a predetermined function, the first ceramic layer having a three-layer structure comprising an intermediate layer having a composition serviceable as a main body, and a pair of surface layers arranged on opposite sides of the intermediate layer and having the same composition as the second ceramic layer.

~~21. A process for producing a composite device of the~~

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laminate type according to claim 20 wherein the intermediate layer of the first ceramic layer is a magnetic body, and the second ceramic layer is a dielectric.

22. A process for producing a composite device of the laminate type according to claim 20 wherein the intermediate layer of the first ceramic layer is a dielectric, and the second ceramic layer is a magnetic body.

23. A green sheet for use in fabricating a composite device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer different from each other in composition, the green sheet being serviceable as a material for the first ceramic layer and having a three-layer structure, the three-layer structure comprising an intermediate layer of a composition serviceable as a main body, and a pair of surface layers arranged on opposite sides of the intermediate layer and having the same composition as another green sheet for making the second ceramic layer.

24. A process for producing a composite device of the laminate type having a laminate structure of a first ceramic layer and a second ceramic layer different from each other in composition, each of the ceramic layers having one or a plurality of circuit element patterns formed on a surface

thereof to provide an electronic circuit for performing a predetermined function, the process having the steps of:

preparing first green sheets for making first ceramic layers and second green sheets for making second ceramic layers,

forming one or a plurality of circuit element patterns on a surface of each of a required number of first green sheets and a required number of second green sheets,

preparing a laminate comprising a plurality of layers by superposing the first green sheets and the second green sheets each having the circuit element pattern or patterns formed thereon, and

firing the laminate,

the first green sheets being each given by the sheet preparing step a three-layer structure comprising an intermediate layer of a composition serviceable as a main body and a pair of surface layers arranged on opposite sides of the intermediate layer and having the same composition as the second green sheet.

25. A process for producing a composite device of the laminate type according to claim 24 wherein the second green sheet is lapped over each of opposite sides of an

intermediate green sheet for making the intermediate layer, and the resulting assembly of the sheets is dried or fired at a low temperature, whereby each of the first green sheets is prepared.

26. A process for producing a composite device of the laminate type according to claim 24 wherein while a slurry for use as a material for the second green sheet is formed into a strip, a slurry for use as a material for the intermediate layer is formed into a strip over the surface of the strip and a slurry for use as the material for the second green sheet is formed into a strip over the surface of the second-mentioned strip, whereby each of the first green sheets is prepared.